

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A mirror parking mechanism for a vehicle exterior rear view mirror that rotates a mirror head to a parked position comprising:
 - a mirror mounting bracket,
 - a mirror head pivotally connected to said mounting bracket so that said mirror head can rotate from a deployed position to a parked position where the outermost portion of said mirror head is positioned closer to said vehicle,
 - a detent acting between said mirror mounting bracket and said mirror head that changes from a locked position, where said mirror head is held with respect to said mirror mounting bracket, to a disengaged position where said mirror head is able to be rotated with respect to said mirror mounting bracket,
 - a spring acting against said detent to hold it in said locked position,
 - a gear wheel secured with respect to said mirror head,
 - a worm drive having a shaft that is journalled in bearings in said mirror mounting bracket, that allows movement of said worm drive in a longitudinal direction as well as rotation about its longitudinal axis, said worm drive engaging said gear wheel and one end of said shaft acting against said spring, and
 - a motor to drive said worm drive wherein during the initial rotation of said worm drive said detent prevents rotation of said gear wheel which causes said worm drive to move longitudinally and push against said spring to in turn reduce the spring force applied to said detent to enable it to disengage whereupon continued rotation of said worm drive causes said gear wheel and mirror head to rotate.
2. A mirror parking mechanism according to claim 1 wherein said pivot comprises a spigot secured to said mirror mounting bracket.
3. A mirror parking mechanism according to claim 1 wherein said pivot comprises a pin.

4. A mirror parking mechanism according to claim 1 wherein said detent comprises a recess on said mirror head and a projection that locates in said recess and that is held in place by said spring.
5. ☐ A mirror parking mechanism according to claim 4 wherein said spring comprises a plate hinged at one end and positioned so that the other end bears against and applies a force to said detent.
6. ☐ A mirror parking mechanism according to claim 5 wherein said projection comprises a roller journalled for rotation in said spring plate.
7. ☐ A mirror parking mechanism according to claim 6 wherein said gear wheel is journalled with respect to the axis of said pivot between said mirror head and mirror mounting bracket and further comprises a clutch between said gear wheel and said mirror head that prevents rotation of said gear wheel with respect to said mirror head during said rotation of said mirror head, but that allows break-away of said mirror head with respect to said gear wheel. (u)
8. ☐ A mirror parking mechanism according to claim 7 wherein said clutch comprises a plurality of projections on said gear wheel and a plurality of recesses within said mirror head within which said projections locate and a gear wheel spring that holds said gear wheel against said mirror head.
9. ☐ A mirror parking mechanism for a vehicle exterior rear view mirror that rotates a mirror head to a parked position comprising:
 - a mirror mounting bracket,
 - a mirror head,
 - a pair of arms each attached at one end to said mirror head, the other end of each arm pivotally connected to said mounting bracket so that said mirror

head can rotate from a deployed position to a parked position where the outermost portion of said mirror head is positioned closer to said vehicle,

a detent acting between said mirror mounting bracket and each said arm that changes from a locked position, where said mirror head is held with respect to said mirror mounting bracket, to a disengaged position where said mirror head is able to be rotated with respect to said mirror mounting bracket,

a spring acting against said detents to hold them in said locked position,

a gear wheel secured with respect to each said arm and journaled with respect to the axis of said pivot between said arms and said mirror mounting bracket,

a pair of worm drives each having a shaft that is journaled in bearings in said mirror mounting means, that allows movement of said worm drives in a longitudinal direction as well as rotation about their longitudinal axis, said worm drives engaging said gear wheels and one end of each said shaft acting against said spring, and

a motor to drive each said worm drive wherein during the initial rotation of each said worm drive, said detents prevent rotation of each said gear wheel which causes said worm drives to move longitudinally and push against said spring to in turn reduce the spring force applied to said detents to enable them to disengage whereupon continued rotation of said worm drives cause said gear wheels and mirror head to rotate.

10. A mirror parking mechanism according to claim 9 wherein each said pivot comprises a pin.

11. A mirror parking mechanism according to claim 9 wherein each said detent comprises a recess on the end of each said arm and a projection that locates in said recess and that is held in place by said spring.

12. A mirror parking mechanism according to claim 11 wherein said spring comprises a plate hinged at an intermediate position and positioned so that each end of said spring bears against and applies a force to one of said detents.

13. A mirror parking mechanism according to claim 12 wherein each said projection comprises a roller journalled for rotation in said spring plate.

14. A mirror parking mechanism according to claim 13 wherein each said gear wheel is journalled with respect to the axis of said pivots between said arms and mirror mounting bracket, and further comprises a clutch between each said gear wheel and said arm that prevents rotation of each said gear wheel with respect to said arm during said rotation of said mirror head, but that allows break-away of said mirror head with respect to each said gear wheel.

15. A mirror parking mechanism according to claim 14 wherein each said clutch comprises a plurality of projections on each said gear wheel and a plurality of recesses within each said arm within which said projections locate and a gear wheel spring that holds each said gear wheel against said arms.

16. A mirror parking mechanism for a vehicle exterior rear view mirror that rotates a mirror head to a parked position comprising:

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a mirror mounting bracket,

a mirror head pivotally connected to said mounting bracket so that said mirror head can rotate from a deployed position to a parked position where the outermost portion of said mirror head is positioned closer to said vehicle, said pivot connection comprising a pin and an elongate aperture in said mirror head that allows said mirror head to move transverse to the longitudinal axis of said pin,

a detent acting between said mirror mounting bracket and said mirror head that changes from a locked position, where said mirror head is held with

respect to said mirror mounting bracket, to being disengaged so that said mirror head is able to rotate with respect to said mirror mounting bracket,

a spring acting against said mirror head to force it against said detent to thereby hold said mirror head in said locked position,

a roller within said mirror mounting bracket,

a ramped surface fixed to said mirror mounting bracket and engaged by said roller, and

a motor in a motor housing, wherein said housing is secured with respect to said mirror head, said roller rotated by said motor so that it moves along said ramped surface, said ramped surface positioned so that said motor housing and mirror head are first pushed away from said mirror mounting bracket to disengage said detent and secondly to rotate said mirror head when said detent is disengaged.

17. A mirror parking mechanism according to claim 16 wherein said spring comprises a coil spring attached at one end to said mirror head and at the other end to said pin.

18. A mirror parking mechanism according to claim 17 further comprising a pair of arms extending between said mirror head and said mirror mounting bracket, an end of each arm pivotally attached to said mirror mounting bracket.

19. A mirror parking mechanism according to claim 18 further comprising a detent, spring, a roller and ramped surface at each of the said pivotally attached ends of said arms.